



CENTERS FOR DISEASE CONTROL AND PREVENTION

## Press Release

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**Contact: Linda S. Orgain, MPH  
(770) 488-5301**

**Mary Kay Sones  
(770) 488-5131**

**CDC, National Center for Chronic Disease Prevention  
and Health Promotion**

### ***The Guide to Community Preventive Services Strongly Recommends Community Water Fluoridation and School-based Sealant Programs to Prevent Tooth Decay***

A report released today by the Centers for Disease Control and Prevention (CDC) issued a strong recommendation for two community-based interventions to prevent tooth decay — community water fluoridation and school dental sealant programs. Some programs provide pit and fissure sealants to children in a school setting, and others also involve private dental practices or public dental clinics.

*Promoting Oral Health: Interventions for Preventing Dental Caries, Oral and Pharyngeal Cancers, and Sports-related Craniofacial Injuries, A Report on the Recommendations of the Task Force on Community Preventive Services ([www.cdc.gov/mmwr](http://www.cdc.gov/mmwr))* summarizes the recommendations of the independent, non-Federal Task Force based on systematic reviews of the scientific evidence of effectiveness for selected community interventions to prevent and control tooth decay, oral (mouth) and pharyngeal (throat) cancers, and sports-related injuries to the head, mouth, and face. These conditions are common, sometimes life-threatening, costly, and potentially preventable by currently used strategies. For example, more than 90 percent of people 18 years and older have had tooth decay.

"This new report combines the best available studies of community water fluoridation and school sealant programs to inform a broad public health audience that show that these interventions are among the most effective means we have for preventing tooth decay," said Dr. William R. Maas, director of CDC's oral health program. "These strategies are particularly useful for reaching entire communities, but especially groups at high risk for decay, and they are essential to achieving the national objectives put forth

by Healthy People. Communities should use these findings to support their local planning processes; if local goals and resources permit, use of these interventions should be initiated or increased."

Community water fluoridation is the adjustment of the natural fluoride level in a community's water system to the optimal level for preventing tooth decay, about 1 part per million. Dental sealants are plastic materials applied to the pits and fissures of teeth to prevent tooth decay. School-based programs provide pit and fissure dental sealants to children in a school setting. School-linked programs also involve private dental practices or public dental clinics.

In their review of the evidence, the Task Force found that:

- Tooth decay typically decreased by 30 percent to 50 percent after starting or continuing community water fluoridation.
- In examining the effectiveness of school-based or school-linked dental sealant programs, there was typically a 60 percent decrease in tooth decay on the chewing surfaces of posterior teeth after sealant application. School-based and linked programs in the U.S. generally target vulnerable populations less likely to receive private dental care such as children eligible for free and reduced lunch programs.

The Task Force also evaluated other community approaches that sought to increase use of dental sealants, to increase early detection of oral cancers and improve health status and reduce mortality from oral cancers, and finally, to encourage the use of helmets, facemasks, and mouthguards in contact sports. However, for these three interventions, the Task Force was unable to make a recommendation either for or against these approaches because of a lack of qualifying studies on which to base a recommendation. This finding indicates the need for more research on effectiveness for these interventions. In the meantime, potential users are encouraged to judge the usefulness of these interventions based on other criteria.

The Task Force review was developed as part of The *Guide to Community Preventive Services* (*Community Guide*) which provides recommendations on population-based interventions to promote health and to prevent disease, injury, disability, and premature death, appropriate for use by communities and healthcare systems. More information about the *Community Guide* (including links to a variety of resources) is available at <http://www.thecommunityguide.org> . Further information about the Task Force's review on oral health can be found at [http://www.thecommunityguide.org/Guide/oralhealth\\_f1.html](http://www.thecommunityguide.org/Guide/oralhealth_f1.html)

Full findings of the Oral Health Chapter will be published in the *American Journal of Preventive Medicine* in 2002.

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The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national and international organizations.

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**CENTERS FOR DISEASE CONTROL AND PREVENTION**  
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## Promoting Oral Health

Despite substantial improvements in oral health for most Americans during the 20<sup>th</sup> Century, the United States still spends an estimated \$65 billion annually on dental services, which includes about 500 million visits to dental offices. Dental caries (tooth decay) is preventable, yet it remains one of the most common diseases of children and adults, and can result in considerable burden especially among low-income children, adolescents, and adults. Lower income, Mexican-American and African-American children and adults have more unmet treatment needs (decayed teeth) than their higher income or non-Hispanic white counterparts. *The question is then, what are effective population-based strategies that prevent tooth decay and promote good oral health?*

### Recommendations

The Task Force on Community Preventive Services recently conducted a systematic review of studies of community water fluoridation and school-based or school-linked pit and fissure sealant delivery programs and found that these interventions are effective in reducing tooth decay. Based on this review, the Task Force issued a **strong recommendation** that these programs be included as part of a comprehensive population-based strategy to prevent or control dental caries in communities. If local goals or resources permit, use of these interventions should be started or increased. Currently, more than 80 million people using public water systems in the U.S. do not have fluoridated water, and fewer than one in four school-aged children have dental sealants (plastic coatings) on the chewing surfaces of molar teeth – far short of the national target of 50%.

The Task Force also reviewed programs that provide statewide or community-wide sealant promotion and programs that promote the early detection of oral pre-cancers and cancers, and programs that encourage the use of helmets, facemasks, and mouthguards to reduce oral-facial trauma in contact sports. The Task Force was unable to make a recommendation either for or against these approaches, however, because of a lack of available research of sufficient quality on which to base a decision about program effectiveness or ineffectiveness.

These reviews were conducted as part of *The Guide to Community Preventive Services*, which addresses community-based interventions summarizing the published evidence on the effectiveness of such strategies. Each recommendation is based on the strength of the evidence of effectiveness found during the systematic reviews. **A determination that evidence is insufficient should not be confused with evidence of ineffectiveness.** A recommendation of insufficient evidence may reveal gaps in the findings where future prevention research is needed. Decision makers should consider these evidence-based recommendations and local needs, goals, and constraints when choosing appropriate interventions.

Intervention	Recommendation	Status
<b>Intervention Strategies for Preventing Dental Caries</b>		
School-based sealant delivery programs	Strongly Recommended	Complete
Community-wide sealant promotion interventions	Insufficient Evidence	Complete
Community water fluoridation	Strongly Recommended	Complete
<b>Intervention Strategies for Preventing Oral and Pharyngeal Cancers</b>		
Population-based interventions for early detection	Insufficient Evidence	Complete
<b>Intervention Strategies for Preventing Oral and Facial Injuries</b>		
Population-based interventions to encourage use of helmets, facemasks, and mouth guards in contact sports	Insufficient Evidence	Complete

**Publication:** [November 30, 2001 CDC MMWR Recommendations and Reports RR-21](#)

The ***Guide to Community Preventive Services*** (*Community Guide*) provides recommendations on population-based interventions to promote health and to prevent disease, injury, disability, and premature death, appropriate for use by communities and healthcare systems. More information about the *Community Guide* (including links to a variety of resources) is available at <http://www.thecommunityguide.org>



Contact: William Maas, DDS, MPH  
CDC, Division of Oral Health  
770-488-6054

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## **Community Water Fluoridation is Strongly Recommended to Reduce Tooth Decay**

Although tooth decay (dental caries) is preventable, it remains a common chronic condition that becomes more prevalent with age. In the United States, 1 in 4 elementary school children (ages 5 to 11 years), 2 out of 3 adolescents (ages 12 to 17 years), and more than 9 in 10 adults (older than 18 years) have experienced tooth decay in their permanent teeth. Among low-income children, more than 1 in 3 have untreated decay in the primary or “baby” teeth that may be associated with pain, difficulty in eating, and underweight.

The Task Force on Community Preventive Services recently conducted a systematic review of studies of community water fluoridation and confirmed that fluoridation is effective in reducing tooth decay. Based on this review, the Task Force issued a strong recommendation that community water fluoridation be included as part of a comprehensive population-based strategy to prevent or control tooth decay in communities. A summary of this review is published in the November 30, 2001 issue of CDC's MMWR Recommendations and Reports, and is available at [http://www.thecommunityguide.org/Guide/oralhealth\\_f1.html](http://www.thecommunityguide.org/Guide/oralhealth_f1.html)

### **Background on Community Water Fluoridation**

Community water fluoridation is defined as adjusting and monitoring fluoride to reach optimal concentrations in community drinking water. National health objectives call for 75% of the U.S. population served by community water systems to be drinking optimally fluoridated water by 2010; currently fewer than 2 out of 3 persons have access to fluoridated drinking water.

### **Preliminary Findings from the Systematic Review**

- 21 reviewed studies compared optimally fluoridated communities with those that were not.
- In studies that measured decay rates before and after water fluoridation, the median decrease in tooth decay among children ages 4 to 17 years was 29.1%.
- In studies that measured decay rates only after water fluoridation, the median decrease in tooth decay was 50.7%
- Fluoridation was found to help decrease tooth decay both in communities with varying decay rates and among children of varying socioeconomic status.

### **About the Community Guide to Preventive Services (the Community Guide)**

The Task Force on Community Preventive Services is a 15-member, nonfederal group with expertise in public health policy, behavioral and social sciences, and epidemiology. The *Community Guide* assesses the effectiveness of a broad range of population-based interventions to improve the health and safety of communities. Staff at CDC support the work of the Task Force and coordinate the day-to-day development and dissemination of the *Community Guide*. More information can be found at <http://www.thecommunityguide.org>.



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CDC, Division of Oral Health  
770-488-6054

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## **School-Based or School-Linked Pit and Fissure Sealant Delivery Programs are Strongly Recommended to Reduce Tooth Decay in Children and Adolescents**

Despite substantial improvements in reducing dental caries (tooth decay) in the United States, dental caries remains one of the most common childhood diseases. It can result in considerable burden, especially among poor children and adolescents aged 5 to 17 years, who are almost twice as likely to have untreated decay as other children. Fluoride use has been credited with much of the decline in dental decay over the past four decades but has limited effectiveness on the chewing surfaces (pits and fissures) of teeth. Today, most decay is found in the pits and fissures of molar teeth. Use of dental sealants – a plastic coating applied to the chewing surfaces – can prevent decay on these surfaces.

The Task Force on Community Preventive Services recently conducted a systematic review of studies of school-based and school-linked dental sealant delivery programs and found that these programs are effective in reducing tooth decay. Based on this review, the Task Force issued a **strong recommendation** that these programs be included as part of a comprehensive population-based strategy to prevent or control dental caries in communities. A summary of this review is published in the November 30, 2001 issue of the CDC's MMWR Recommendations and Reports, and is available at [http://www.thecommunityguide.org/Guide/oralhealth\\_f1.html](http://www.thecommunityguide.org/Guide/oralhealth_f1.html)

### **Background on School-based or School-linked Pit and Fissure Sealant Delivery Programs**

These programs were defined as programs that provide direct delivery of dental sealants to children in school-based or school-linked (clinic or private practice) settings.

### **Preliminary Findings from the Systematic Review**

- The systematic review included 10 studies that compared programs where sealants were applied versus those where no sealants were applied; children were examined for tooth decay from 2 to 5 years later.
- The median decrease in occlusal caries (i.e., those on the horizontal surfaces of molars and pre-molars) in posterior teeth among children aged 6 to 17 years was 60%.
- Application of sealants in school-based or school-linked programs was found to be effective among children of varying socioeconomic status and risk of decay.

### **About the Guide to Community Preventive Services (the Community Guide)**

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